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MANUFACTURE OF SALT AT SYRACUSE, N. Y.

THE famous salt region of Onondaga County, in the State of New York, has for over a century been a centre for the production of this all-important substance. As long ago as 1770, salt from the salt springs then in existence was used by the Delaware Indians. Eighteen years later the white inhabitants began to make salt by the boiling process, near the site of the present city of Syracuse. The territory from which most of the salt is now produced is a government reservation whose status is established by a treaty made between the Onondaga Indians and the State of New York. The wells are maintained and the brine pumped by the State government, and the brine is delivered to the manufacturers at a royalty of one cent per bushel. The bushel is an arbitrary term indicating a net weight of 56 pounds or one half-hundredweight. The wells, which are sunk and maintained by the State, vary from 150 to 340 feet in depth. Brine is pumped from them which at 60° F. averages 50° to 70° on the salometer. According to Dr. Englehardt's standard table of equivalents, these figures range thus:

Salometer.	Baumé.	Per cent salt.	Pounds salt in gallon.	Gallons to 1 bushel.
50°	13°	13.250	1.206	46.41
70°	18.2°	18.815	1.755	31.89

As a more appreciable standard it may be mentioned that sea water contains 2.7 per cent of salt, and that it requires 350 gallons to make 1 bushel of salt.

Originally the tax or royalty was much higher than at present. At one time as much as 12 cents a bushel was charged the manufacturers. Since then it has been reduced, first to 6 cents, and finally, in 1846, to 1 cent per bushel. It is evident that at the higher rate a considerable revenue was derived from the wells. For the expense of building the Erie Canal a sum of $2,300,000 was appropriated from the salt royalty. This sum represents nearly one-third of the expense of construction, so that the salt makers are justified in their claim that but for the salt industry the Erie Canal might never have been made.

The salt deposits lie in rocks of the upper Silurian age. The old springs were found in the marshy ground surrounding Onondaga Lake. The waters of the lake are excluded from the salt-bearing strata by impervious marl and marly clay. The wells pass through beds of fine sand and clay. After penetrating these layers a gravel is reached which contains the salt water. The brine is pumped from the gravel beds into reservoirs, whence it is delivered through log piping to the different works.

The Onondaga brine contains several impurities. The principal is calcic sulphate, more familiar in the form and under the name of gypsum or plaster of Paris. This runs as high as one-half of 1 per cent referred to the brines, representing, therefore, 2 or 3 per cent of the dissolved salts. Calcium and magnesium chlorides, with traces of carbonic acid and oxide of iron, are also present. The iron oxide is only objectionable as spoiling the color of the salt, but owing to this its removal is imperative. The calcium and magnesium chlorides are deliquescent. Fortunately they exist in small proportions only in the brines. If in large quantity, they would make the salt moist and give it a tendency to cake, and eventually to become almost liquid. The calcium sulphate is not nearly so soluble as the other salts, and is partly precipitated in the evaporation, and most of it is removed from the concentrated brine. It is obvious that any insoluble matter would be considered an impurity, so that the manufacturer tries to remove this compound as completely as possible.

The salt is obtained by evaporation, either by solar or by artificial heat. In either case the first operation is to clarify the brine by settling. It is allowed to stand in vats in the open air or in factory buildings until the iron oxide has settled and the carbonic acid has escaped or has become precipitated.

At this stage the settling is sometimes aided by the addition of a little milk of lime. Alum or gelatin has been employed or suggested also as a clarifier. Two successive settlings in such vats are applied.

In the next step of the solar process the clarified brine is run into evaporating vats, where it is acted upon by the sun's heat, and gradually becomes concentrated. Movable covers or roofs are provided to be placed over the vats in case of rain.

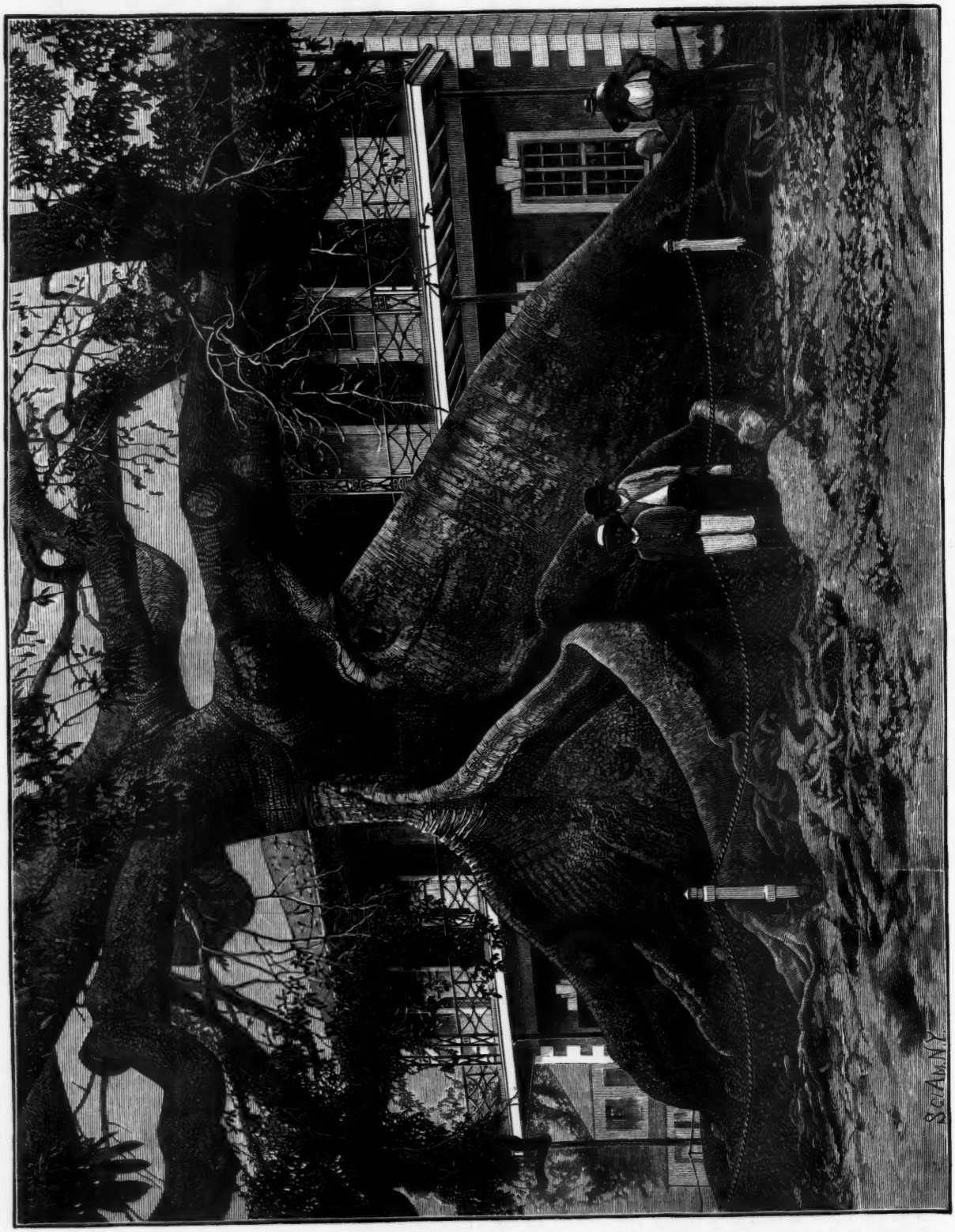
As it becomes stronger, the comparatively insoluble calcium sulphate begins to precipitate. The slow evaporation favors crystallization, and the salt begins to separate as large crystals, and is called "coarse salt." As soon as crystals begin to appear, the saturated brine, called "salt pickle," is run off into a fourth series of vats for final concentration. As the crystals accumulate in sufficient quantity they are removed and are washed in the fresh pickle. The object of this is to remove the strong brine, which contains a concentration of the calcium and magnesium chlorides. The product is then allowed to drain, and when sufficiently dry is removed to the storehouse. This is an outline of the process of making what is known as "solar salt."

Salt made by artificial heat is known as boiled salt. The term "factory filled" is applied to the purer brands. This term is indicated by the familiar letters F. F. branded on the large sacks. The kettle process is largely used at the Syracuse works. The brine after settling and clarifying is run into kettles heated by fires underneath. An iron pan with an upright handle is placed in the bottom of each pan.

As the liquid evaporates and the gypsum separates, it accumulates in these pans, and is from time to time removed and thrown aside. This is termed "panning from the kettle." It is here that one essential difference between the solar and boiling process appears. Calcium sulphate or gypsum is less soluble in hot than in cold brine, so that a better separation of this impurity is effected than in the solar process. Each kettle has a capacity of 100 to 120 gallons, and fifty or sixty kettles may be set in a row. As soon as salt crystals begin to appear, the gypsum pan is removed and the salt is taken out by the workmen, is washed with fresh brine, and is drained in baskets suspended over the kettles. Brine is run in as required from the central distributing pipe.

The difference in grain in solar and boiled salt is considerable. The solar salt is so coarse that to adapt it for many uses it has to be ground in mills. This is done in the factories, and the product is known as "ground solar" salt. The boiled salt is of a much finer grain, and by the addition of some suitable substance to the kettles the grain may be made still finer. This process is termed "cutting the grain." Salt thus made is called "anthracite salt." The material added consists of traces of such matter as glue, resin, soap, etc. While the process has been known for many generations, it is condemned by many salt makers.

In the modern washing process, the salt is delivered at



SILK-COTTON TREE IN NASSAU, BAHAMA ISLANDS.

one end of the apparatus through a chute. The brine enters at the same end and permeates the mass, and as the whole is kept in agitation the washing is very perfect. The salt saturated with the purer brine is drawn off and has to be dried. In the modern process this is done in centrifugal machines. There it is whirled around rapidly and the brine is expelled thoroughly by centrifugal force, exactly as sugar is treated for the expulsion of syrup. The separation is, of course, much more complete than where gravity alone is relied on, as in the draining process. When it is remembered that the calcium and magnesium chlorides are mainly present as ingredients of the residual brine, the importance of reducing the amount of this brine as much as possible is evident.

What the future of this historic industry will be is not absolutely certain. The expense of making boiled salt is largely due to the cost of fuel. The kettle process, although a relic of the last century, has not yet been superseded. Success has been attained in utilizing anthracite coal dust. Forty to forty-five bushels of salt are produced with the combustion of one ton of anthracite dust costing $1.75. Some years ago but thirty-seven bushels were produced with the consumption of one ton of bituminous coal costing $4.10. Yet this saving is offset by the fact that the evaporation per pound of fuel is only 5.83 pounds of water—less than half the work of a good steam boiler. One most serious menace comes from the West. Michigan, Ohio, and Kansas are now strong competitors with the New York works. There are two layers of rock salt, forty-five and fifty-four feet thick, seventeen miles south of Syracuse. These may be instrumental in changing the aspect of things in the near future.

The first leases in lots under the auspices of the State took place in 1797. The product for 1798 was 59,928 bushels of solar salt, under the superintendence of William Stevens. In 1889, under Superintendent P. J. Brummelkamp, 2,916,923 bushels of solar and 2,448,138 bushels of boiled salt, making an aggregate of 5,365,061 bushels, were produced. This is not high-water mark. The following table gives the years of maximum production and the amounts produced:

Year.	Solar salt.	Boiled salt.	Total of both kinds.
1862	1,983,022	7,070,852	9,053,874
1868..	2,027,490	6,639,126	8,666,616
1870....	2,847,691	6,260,422	9,108,113
1871..	2,464,404	5,910,492	8,374,896
1882..	3,032,447	5,307,773	8,340,220

Since 1882 the production has constantly decreased.

The State exercises a certain supervision over the manufacture. The salt, after making, must be stored at least two weeks before shipment. Before and after the storage period it is inspected by the State inspector. The product as delivered to the public is exceedingly pure. It is gratifying to know that it compares with the finest foreign product in freedom from objectionable magnesium and calcium compounds.—*Scientific American.*

THE SILK-COTTON TREE.

BY J. F. COONLEY.

THE sebae, or silk-cotton tree, *Eriodendron anfractuosum*, is a native of the West Indies. The one represented here is a very wonderful and interesting specimen, now existing at Nassau, N. P. Its branches spread one hundred and seventy feet, and would extend still further, but are cut off frequently, as they encroach on the police barracks. The huge roots seen in our picture spread nearly forty feet above the ground. When we take into consideration that here is a tree spreading its branches nearly or quite ninety feet northeast and southwest from its trunk, that owing to the rock on which it grows will not admit of its roots penetrating the earth to support such an immense spread of limb and foliage, we have to admire the wisdom of nature in building the immense braces or supports in the form of roots by which this mass is upheld, and those all, or nearly all, on the surface of the ground. Several of the spaces between these roots would hide a horse completely from sight. The foliage falls near spring, and in a few days it starts again. I have seen it with bare branches Saturday evening and thick with foliage the following Monday morning. It seems magic the way the foliage develops. The immense roots and the extreme spread of the branches of this particular tree may be due, to a great extent, to its peculiar location. It stands in the rear of the public buildings, and is by them protected from the high winds from the sea and the hurricanes, and to that fact may perhaps be attributed many of its peculiarities. At one season of the year, near spring, it sheds a silky fibre like cotton, only much finer, that covers the ground for a long distance wherever the wind takes it. This fibre probably gives it its name of the silk-cotton tree, by which it is familiarly known. The engraving is from a photograph of the tree. —*Scientific American.*

THE MANUFACTURE OF HYDROGEN DIOXIDE.

BY A. BOURGOUGNON.

IN 1878 I manufactured hydrogen dioxide on a commercial scale, and the following is a description of the method I adopted for the preparation of this bleaching compound:

The first step, and a very important one, is the hydration of the barium dioxide. Into a suitable vessel—an ordinary cylindrical stone pot, about half-full of water—the powdered dioxide is slowly poured, the mixture being well stirred with a wooden spatula during this operation, and continued after its completion for about twenty minutes. Then the mixture is left alone, and stirred every half-hour or oftener for about ten minutes until the hydration is completed. This operation requires from three to four hours; the barium dioxide forms then a thick, perfectly white and smooth, pasty mass, resembling white clay mixed with water.

While the hydration is progressing, a mixture of water and hydrofluoric acid is made in a vessel lined with sheet lead, and surrounded with ice, or simply with water in which lumps of ice are placed from time to time, so as not to allow the temperature of the acid mixture to rise above 10° C. during the operation.

All things being properly disposed, the hydrated barium dioxide is added, in portions of three to four pounds at a time, to the acid mixture, stirring all the time to mix the contents of the vessel thoroughly. All the barium is transferred to the acidulated water in about two hours, and the agitation continued for four hours. If the operation has been well conducted, all the barium dioxide is transformed into fluoride, which falls to the bottom of the vessel. When this precipitate is well settled, the supernatant liquid is decanted into a vessel similar to the one used for its production, and also surrounded by ice water. The clear liquid contains an excess of acid and impurities derived from the materials employed; its color is yellowish, and it must be purified to insure its keeping properties.

The impurities which are to be removed are chiefly ferric oxide, alumina, and manganese oxide. To the cold solution of impure hydrogen dioxide small quantities of hydrated barium dioxide are added at a time and well stirred. When the last traces of acid are saturated, the appearance of the liquid suddenly changes, from a bright yellow it turns to a grayish color, and the impurities are separated and collected at the surface of the liquid.

Without losing time, the liquid is filtered through a cheese cloth stretched on a frame, and received in a vessel which contains a small quantity of sulphuric acid diluted with eight to ten times its volume of water (acid 1 ounce, water 8 to 10 ounces). This filtration must be quickly done. As long as the solution is alkaline there is great danger of decomposition and loss of oxygen. If the liquid is thrown upon the filter, the latter will be quickly clogged, the filtration stopped, and the hydrogen dioxide will rapidly decompose, emitting large bubbles of oxygen with a hissing noise; but as the precipitated impurities collect first on the top of the liquid, if the solution is siphoned from below these impurities the liquid filters quickly and satisfactorily.

The filtered liquid is tested for barium, and sulphuric

acid is added to it until all is removed. The liquid is left over night, the precipitate of barium sulphate settles, and the perfectly clear and colorless liquid is ready for the market. All the precipitates are separated by pressure from the liquid they may contain, and the liquid so obtained is added to the water employed in the next operation. I employed the following proportions:

Barium Dioxide	60 pounds
Hydrofluoric Acid	25 "
Water	40 gallons

and obtained nearly 40 gallons of hydrogen dioxide. The strength of the acid was about 33 per cent.—*Journal of the American Chemical Society.*

Ginseng and its Cultivation.

THE great demand and high prices paid for the dried roots of the little native plant, so long known by its Chinese name of *ginseng*, very naturally incites inquiry in regard to its history, propagation, and cultivation. For how many centuries this root has held a high position in the *materia medica* of China is unknown, but it must have been considered a valuable medicine for ages, because in the great forests of Chinese Tartary where it once grew in abundance it is now nearly or quite extinct. But the Chinese, who change not in their opinions or habits, believe that ginseng is a veritable panacea for "all the ills that flesh is heir to," so continue to seek it wherever it is to be found, even in the land of the barbarians or that of the United States. Great must have been the rejoicing among the Chinese doctors when they learned that the precious plant had been found here, and in the same latitude and under similar conditions as in Chinese Tartary; but they appear to have kept very quiet about it for many years, and yet all the time getting a considerable quantity from this country through their English agents and for a far less price than it could be obtained at home.

Linnæus, when giving a scientific name to the American ginseng, must have considered it closely allied or identical with the Chinese plant, for he gave it the generic name of *Panax*, from an old Greek name used by Theophrastus to indicate a panacea or remedy for all complaints of the flesh; then added the specific name of *quinquefolium*, that is, five-leaved, and so it stands to-day in botanical works *Panax quinquefolium*. There are several native species of *Panax*, but none of them possess the aromatic, pungent taste of the one known as ginseng, therefore not in demand for either home use or export. That ginseng possesses any special medicinal properties is very doubtful, although its long and continued use among the Chinese would rather lead us to think otherwise; but, like many other medicines in constant use among the Chinese, its supposed valuable properties may be ascribed to fashion or the effects of imagination. We are more inclined to think that the medicinal virtue of this root is wholly imaginary from the fact that the Chinese doctors claim that the roots of different shape possess widely different medical properties, although this may be only an excuse for a little sharp practice in increasing charges while attending wealthy patients. For instance, when the ordinary dry roots of ginseng are worth their weight in silver in China, should one be found assuming the form of a man with body, legs, etc., it will readily sell for its weight in gold, and perhaps be doled out only to such invalids as are able and willing to pay for such luxurious medicine. But we are not so much interested in what becomes of the roots as to how we are to supply the increasing demand.

Ginseng is indigenous to the greater part of the cooler regions of the United States. In Georgia and Alabama it is found in the mountains and thence northward along the elevated plateaus, gradually descending to near the sea level in some of our Northern States. It appears to thrive best in loamy soils, such as are usually found in sugar maple and oak forests at the North. Shade seems also to be essential, for when the plants are exposed to the direct rays of the sun they soon die out, and for this reason open field or garden cultivation of the plants has rarely or never been attended with success. The proper way to start a plantation is to select a piece of land at the edge of some forest where the plants are found growing wild. Then clear out all the underbrush and small trees, leaving just enough of the larger ones to afford the shade required. This should be done in spring or during the summer. Then break up the surface of the soil with a harrow, steel rakes, hoes, or other implements to the depth of two or three inches, removing all weeds, grasses, and their roots. The bed thus prepared will be ready for the reception of seeds and small unsalable roots as collected in the autumn, the season of ripening depending somewhat upon latitude.

Ginseng berries are of a crimson color when ripe, each containing two seeds, produced in small clusters at the top of a central peduncle elevated above the principal leaves. When gathering the seed the roots may also be dug up, and all small and unsalable ones preserved and replanted in the prepared bed. The seed should be rubbed from the pulp very carefully with the hand, and then sown, or better pressed into the ground with the finger about half an inch deep, and one every six inches along the row. The rows should be from one to two feet apart for convenience in removing weeds, should any appear. Both seeds and plants should be in the ground before hard frosts occur in autumn, for when these come the leaves of the large trees will fall on the bed and give the natural protection required.

The following season no cultivation will be needed—if the bed is thinly covered with leaves—except to cut out sprouts and remove any large, coarse weeds which may spring up from seeds or roots left in the ground. If winds blow away the leaves needed as a mulch, a few old dead branches of trees may be scattered about to hold the mulch in place. At the end of the third season the roots will have reached a remarkable size and may then be dug, and the same bed worked over and restocked with seeds or small plants. Some who have tried it say that raising ginseng can be made profitable where a man has suitable land in the forest or grove near at hand. The cost of preparing a bed cannot be very much, and the seed can be obtained from the wild plants in our forests.—A. S. FULLER, *American Agriculturist.*

Increasing the Sensitiveness of Photo. Films.

THE following process is by York Schwartz, of Hanover, Germany. It consists in mixing the materials for making the film with, or coating the photographic films with formaldehyde or a compound of formaldehyde with bisulphite salts.

The process is based on the discovery that the sensitiveness of silver compounds to light is materially increased, or that the effect of light on the same is continued, by the presence of formaldehyde, or a compound of formaldehyde with a bisulphite of an alkali metal or of ammonia or of substituted ammonia (capable of forming bisulphite) in the sensitive silver compounds.

For photographic purposes these discoveries may be utilized as follows: First, by adding one or more of the specified compounds, either alone or in mixture with other substances, to the substances for making the films, at the time of the production of the sensitive film; second, by bathing the finished photographic film in a solution of the said compounds or mixtures before the film is exposed to light; and third, by treating the photographic film after exposure with a solution of the said compounds or mixtures. In this case the changes produced in the film by the action of the light are continued, so as to obtain in this manner the same result as by a correspondingly longer exposure to light.

The application of the said compounds constitutes an important improvement in the manufacture of photographic films, because they possess in an increased measure all advantages of the substances hitherto employed for similar purposes, without sharing their faults—for instance, the tendency to form clouds or specks or of imparting a yellowish tint to the film.—*Scientific American.*

It is reported that Emperor William has chosen Baron Falkenhausen to study the action of Reiger's new cure for diphtheria. Thousands, it is claimed, have been cured by this wonderful remedy, which is said to be a thick, oily fluid manufactured from plants growing wild in certain districts.

Do Cats Spread Disease?

THE QUESTION OF DOMESTIC ANIMALS CARRYING CONTAGION IS AN INTERESTING ONE.

A PECULIAR incident occurred in this city recently. A case of diphtheria broke out in a certain neighborhood, and to insure safety from the disease a family sent their child to another part of the city to remain for a time. In this locality there was a case of scarlatina, and the little child contracted the disease, it is supposed, from playing with the cat which came from the infected house, and died from the effects. Another case is cited where children contracted the diphtheria from playing with a cat belonging to a family where the disease prevailed. Leading physicians say that while there are quite a number of single cases, the disease cannot be considered epidemic.

In studying the best methods of preventing an epidemic much attention is being paid to the question as to whether domestic animals, cats especially, do carry contagion or not. Physicians disagree in regard to this theory. Dr. H. M. Lash is of the opinion that there is no doubt that infectious diseases can be spread by animals; cats especially, by being handled by various people, are liable to carry the germs of disease in their coats, and these germs, coming in contact with a person's hands or clothing, under certain conditions develop the disease. Dr. Lash favors the opinion that clothing, money, letters, and the atmosphere will all carry the disease germs, and patients afflicted with contagious diseases should be quarantined to insure safety.

Dr. Runnels holds that while the theory of a child's contracting the scarlatina from playing with a cat is possibly tenable, it is hardly probable. He has known of no such case. It is now a disputed theory among physicians as to whether the scaly particles that fall from the persons of scarlatina patients are infectious or not. It has been the general opinion that this was the most contagious stage of the disease, but experiments have shown that while in some cases these scales have proved infectious, in other cases they have not. Dr. Runnels shares the opinion of a noted Chicago physician who is considered an authority on the diseases of children. The physician in an address stated that certain diseases, as measles, scarlatina, and diphtheria, are peculiar to children, and all children are liable to them. He believes that if a lot of children were taken out to an island and isolated from every other human being and animal, even in the purest atmosphere, they would have these diseases.

Dr. Runnels is of the opinion that while a dog or cat might possibly carry a germ of disease which would prove infectious, the person would have to be liable physically to take the disease. He does not think that money is liable to carry infection, unless it has been in the mouth of a patient and then another person takes it in his mouth. The atmosphere, too, in Dr. Runnels' opinion, can hardly be considered a medium for spreading disease from different parts of the country, since the currents of air are hardly the same outside a radius of 200 miles.

Dr. T. N. Bryan has little faith in the theory that cats carry disease; while it is a possibility, it is not a probability. There are extremists in everything, and the bacteria or germ theory is carried to extremes in some cases. Thirty-five years ago diphtheria was not known. It first broke out in Pennsylvania a few years later. While there are genuine cases of diphtheria nowadays, much of the so-called diphtheria is various kinds of throat trouble. Danger of contracting disease lies more in lack of cleanliness and good sanitary regulations than in contact with the so-called germs. Contagious diseases often run through families and neighborhoods from some local cause, as bad drainage, etc.—*Indianapolis Sentinel.*

Removing Lime from Sugar Pans.—N. Oleson, Winneshiek Co., Iowa: The easiest way to remove the lime deposit from evaporating pans is to use muriatic acid and soft water, in the proportion of 1 pound of acid to 1 gallon of water; mix enough to cover the bottom well. It will dissolve the scale in a short time, so that it can be removed with a brush. It should be applied cold, and may be used repeatedly with equally good effect.

Dangers of Gasoline.

THE *Pantagraph* gives an account of two recent cases at Normal, Texas, which should serve as a warning to those who use gasoline or coal stoves.

A short time ago Mr. John W. Gee and his wife and six-months-old child came to Normal from El Paso. He came to attend the university, and they rented two upstairs rooms. In one of the rooms they had a gasoline stove and did their cooking, and the other was used as a sleeping room.

One morning they arose about 5 o'clock, and were heard for the last time about 6 o'clock. At 7 o'clock the Gee baby was heard crying, and a neighbor went upstairs to ascertain the cause. The baby was in the sleeping room, and she picked the child up and opened the door to the other room, which the Gees used as a kitchen. The bodies of Mr. and Mrs. Gee, lying in a cramped position, met her gaze. The sight was too much for her and she ran shrieking down the stairs and fainted.

Mr. G. H. Warner, who lives next door, came in, and, detecting the odor of gas in the room in which the bodies were, opened the doors and windows and attempted to resuscitate the man and woman. The bodies were cold and his efforts were of no avail.

At the inquest Mr. Warner testified that he turned off the jets in the gasoline stove, opened the windows, and the stove was a new two-burner.

Prof. B. P. Colton, professor of chemistry in the Normal University, was called, and said that the natural odor or fume of gasoline was not suffocating; that the gasoline stove in ordinary running can, and does sometimes, produce a carbonic acid gas that would cause an intense headache, but would be slow in its effects. He said, also, that it produced a carbonic oxide when only partial combustion occurred, which would prove fatal if a full breath was taken. It is the same as that formed in hard-coal stoves.

The jury rendered a verdict to the effect that Mr. and Mrs. Gee came to their deaths by inhaling carbon monoxide gas produced by a gasoline stove. The faces of the dead looked perfectly natural and gave evidence that the grim reaper's work was done quickly. The baby was slightly affected by the gas, but is now all right.

The room in which the accident occurred is a small one, and the windows and doors were closed tight. The couple were dressed, and had apparently had breakfast. The stove had been used, and from some cause, which does not clearly appear, gas was generated. It is believed that this was heavier than the air, and hence hung in a thick mass near the floor. The supposition is that Mrs. Gee stooped down for some purpose, and, getting a breath of the poisonous vapor, fell. Her husband, in attempting to pick her up, met the same fate and fell dying beside her. This supposition is formed from the position of the bodies. For some time after the windows had been opened there was a strong smell of gas in the room. Prof. Colton declared that the gas was so deadly that one breath was sufficient to destroy life.

Prickly Heat.

IN many persons the eruption known as prickly heat comes from the corrosive action of the acid perspiration. It is worse whenever the clothing has an opportunity to rub the skin. In cases of persons having delicate or thin skins, much relief may often be obtained by applying a lather of soap and letting it dry in. The soap is sufficiently alkaline in its nature to neutralize the acid of the perspiration and stop its corroding effect. The soap used should be of the finest kind. As a rule, chafing is due to the same cause, and can be cured by the treatment mentioned. Some persons find the use of soap much more beneficial and satisfactory than that of vaseline or oil of any kind. The oil acts merely as a lubricant and to soothe the inflammation. The soap does the same, but also removes the cause of the trouble to a great extent. In applying the soap to infants extreme caution should be used. Only a small surface should be soaped until certain that no injurious results follow. Some persons get relief from bathing with a weak solution of bicarbonate of soda.—A. M. WILLIAMS.

Ether Drinking in Ireland.

A *Herald* correspondent had a long and interesting conversation yesterday with Dr. Norman Kerr, president of the Society for the Study and Cure of Inebriety, on the remarkable spread of ether drinking in the North of Ireland.

As an indication of the extent to which this strange and pernicious habit has increased, it is sufficient to state that in the single village of Cookstown not less than two tons of methylated spirit, which is practically pure ether, are consumed annually. How many tons of the drug are swallowed by the population of the counties Derry, Tyrone, and Armagh, where the habit is spreading with alarming rapidity, it is impossible to say for want of accurate information. The amount, however, must be enormous.

"Undoubtedly there must be special reasons why this ether habit should be limited to such a comparatively small region; but I must admit that in spite of our best efforts we are yet unable to state with certainty what those special reasons are. It is almost impossible to obtain reliable statistics as to the amount of ether sold and the classes of society who indulge in it most largely. For evident reasons the situation is not painted nearly as black as it really is, and even the priests, who are fighting strenuously against the ether habit, will not tell us what they know, inasmuch as a foolish idea has been put forward that Roman Catholics are the chief victims to ether intoxication.

"The intoxicating effect of ether is much quicker in its action than that of alcohol. A man can be perfectly sober at noon, take a drink of ether, be blind drunk at a quarter to one and sober again three-quarters of an hour later, so you see it is literally true that an ether drinker can get drunk and sober half a dozen times in a single day. I explained this curious phenomenon to a medical friend of mine, who, incredulous, determined to experiment with a dose of ether upon himself. I poured out for him about half a wineglassful, which is sufficient to produce drunkenness in one unaccustomed to the drug. He swallowed it at a gulp, nearly burning out the roof of his mouth, and within half an hour he was dancing about the room like a wild man, and became so pugnacious as to drive his clenched fist through a pane of glass, thereby cutting his wrist severely. A little later he was perfectly sober, the effects having entirely passed away, and he would only be convinced that he had gone through the antics I described when I showed him the cuts upon his hand."—From the London Edition of the *Herald*.

Gamboge.

GAMBOGE is mostly imported in cases with an inner covering of coarse calico, usually about a picul (133⅓ lbs.), sometimes only half a picul, and not infrequently about 250 lbs. in weight. The drug appears most frequently in rolls of various length, sometimes solid, more often hollow in the centre, that shape being produced by the method of collection of the gum, which is caught from the trees in bamboo sticks, the latter being peeled off when the juice inside has hardened. The pieces often bear the impress of the bamboo. Occasionally we receive gum in more or less shapeless blocks and lumps, which clearly reveal that they have been packed in pulp leaves. Gamboge is exceedingly liable to adulteration at the place of shipment, and it is also often met with in a damp state. The adulteration usually consists of sand or heavy stones, which are deftly placed within the bamboo tubes in which the gamboge is moulded, before the gum has hardened. The museum at the London drug warehouse also contains specimens of a gamboge within which were found concealed solid lumps of lead, seriously affecting the weight of the drug. Years ago gamboge sometimes arrived with the bamboo tubes still around it, but this mode of exporting it has, too, become obsolete. The exports of gamboge from Singapore are returned as follows: 1887, 215 piculs; 1888, 298 piculs. Gamboge, as its name indicates, is found in the forests of Cambodia, and also in the eastern provinces of Siam. For some years the quantity of this gum brought to market has greatly diminished, and its scarcity has increased the price.—*Chemist and Druggist.*

Chinch Bug Lymph.

PROF. F. H. SNOW, State Entomologist of Kansas, has been experimenting for two years to perfect his plan for the spreading of a contagious disease among chinch bugs with a view to exterminating this pest of the Western farms.

He has just sent out fifty packages of inoculated bugs, instructing the receivers to place the dead bugs in a jar for forty-eight hours with from ten to twenty times as many live bugs from the field. In this way the disease is to be communicated to the live bugs in the jar. These sick bugs being deposited in different portions of the field of experiment, are expected to communicate the disease while moving about among the healthy bugs.

Actual experiment has shown the efficacy of the scheme. The disease was successfully introduced from Prof. Snow's laboratory into the States of Missouri, Nebraska, Indiana, Ohio, and Minnesota, and into various counties of the State of Kansas, and the chinch bugs in these localities were exterminated. Farmers there declare that their fields were saved from devastation.

Prof. Snow has found that there are three different causes to which may be ascribed the rapid dying of chinch bugs. The first and perhaps the principal cause in his experiments is the attack of a certain bacterial germ. Myriads of the minute animated atoms may be seen with a microscope in the body of the diseased bug. The second cause is the growth of a white fungus, the spores of which are carried by the wind, and are thus easily scattered over the entire field. The third cause is the presence of still another fungus, which differs from the white fungus in color. These fungi have scientific names and have been described and studied by various scientific men.—*New York World.*

Care of Mocking Birds.

YOUNG mocking birds cannot stand a cold temperature. The cage should be covered up at night and placed near the stove. A fall of temperature from 80° to 40° is too much for old or young. All birds should have their cages covered up at night. The food for young mocking birds should be meal and milk, and occasionally minced fresh meat. Animal food finely chopped up and well soaked in milk should be their first feed. Grasshoppers, spiders, or meal worms should be given the old ones, and, of course, the regular diet of mocking-bird food. Several formulas for making this food could be given, but it can be purchased so cheaply at any bird store or druggist's that it would not pay to bother with it. During the moulting season it is well to put a rusty nail in the drinking water.

Ingrowing Toe Nails.

A WRITER in the *Scientific American* contributes the following remedial treatment for the above-named trouble:

Raise the ingrowing part as much as possible by packing with lint or cotton beneath. Allow this to remain a day or so. Remove this and now put in its place mercuric oxide, HgO, easily obtainable at any drug store. Press in a little cotton to keep the mercury in place. Cleanse the parts every day or two, but be sure the mercury is kept over and around the ingrowing part. The mercury seems to destroy the nail where it touches it, and at the same time deadens sensation without producing any deleterious effects.

Reliability of the Lactometer.

THE lactometer does not tell "the whole truth and nothing but the truth." It ignores the fat of milk. The richer the milk the poorer the lactometer makes it. A good supply of fat aids all the functions of life, and helps the digestion of the starchy foods. Too much care cannot be bestowed in securing pure milk from healthy cows fed on good, sound food. Large cities can only secure pure, sound milk by intelligent inspection, not only of the milk but of the dairy, so that all food and surroundings shall show the best sanitary conditions.—N. ROTHER.

Artificial Rubies and Sapphires.

THERE was quite a sensation on November 10th at the Academy of Sciences, writes our Paris correspondent, when M. Frémy uncovered the sparkling display of rubies produced synthetically by M. Verneuil under his guidance. There they were, perfectly rhombohedric, blood-red, and brilliant, not large perhaps, but in a thick crust, nearly one inch deep, still adhering to the sides of the broken crucible. He explained that the process was substantially the same as that followed a year or two since and mentioned at the time in the *Chemist and Druggist*, namely, heating together anhydrous alumina and potassium fluoride with a trace, 1½ per cent, of chromium oxide. The only chemical differences were that this time the mixture was rendered alkaline with potassium bicarbonate, and the mingling of the components was purposely left imperfect so that the combination should take place between the volatilized elements, and the crystals could grow by "feeding," as is done with crystals by the wet process. Another difference was in the manipulation. Instead of using a gas furnace, they were enabled, through the courtesy of MM. Appert, the glass manufacturers, to keep large crucibles constantly heated for one week at a temperature of 1,300° C. In this manner batches of 3 kilos were obtained, and now shown to the Academy, out of 5-kilo charges.

The crust inlaying the implement consists of perfect crystals, easily taken apart by simple rubbing.

The largest weigh 75 Mgm.—about one-third of a karat. Chemically, there is no doubt, the crystals are identical with natural rubies; but to ascertain their industrial value some were cut by a lapidary into the usual rose shape, and pronounced by jewellers equal in hardness and brilliancy to the natural stones. Another interesting result of the experiments was that the crystals here and there, but in very small numbers, were, instead of ruby-red, sapphire-blue; and in one instance there was one red on one side and blue on the other. What influence or circumstance may have caused this variation has not been ascertained, but it proves the two gems to be closely related.

Under a magnifying lens, as seen by your correspondent, the perfect regularity of the crystals was remarkable.—*Chem. and Drugg.*

Wax Analysis.

THE method most commonly employed for the analysis of beeswax is based upon Köttstorfer's process for the analysis of fats by two successive saponifications, as follows:

Five Gm. of the wax are warmed with 20 C.c. of alcohol (of 95°) until they fuse, and a few drops of alcoholic solution of phenolphthalein having been added, the whole is shaken and titrated, while still warm, with semi-normal solution of potassium hydrate delivered from a burette divided into 0.5 C.c. From the result of this experiment the quantity of potash, in milligrammes, necessary to saturate the cerotic acid contained in 1 Gm. of the wax is calculated, and is put down as *the first number*.

Twenty C.c. more of the potash solution are then run in, and, the flask having been connected with an upright condenser, the whole is heated until entire saponification has taken place.

When this is attained, the flask is brought under a burette containing semi-normal hydrochloric acid, and titrated until the color is just discharged.

The number of cubic centimeters of hydrochloric acid so used deducted from 20 gives the cubic centimeters of the potash solution used up in the act of saponifying the myricyl palmitate. From this is calculated the amount of potash in milligrammes necessary for 1 Gm. of the wax, and the figure so obtained is called *the second number*. Finally, the first and second numbers are added together to obtain *the third number*.

Numerous researches have shown that in pure yellow beeswax the first number is 20 Mgm. (or between 19 and 21); that the second number is 75 Mgm. (or from 73 to 76); while the third number is 95 (or from 92 to 97). The relation between the first and second numbers in genuine wax is as 1 to 3.7 on the average, but may vary between 1 to 3.6 and 1 to 3.8, and the third number must not be departed from in any genuine sample.

Recently G. Buchner has analyzed a series of samples, and has given the following results tending to show that this theory breaks down when we have to deal with wax which has been bleached by chemical means. The following are Buchner's results:

	1st No.	2d No.	3d No.	Relation.
Yellow wax	20.2	73.8	94.8	1:3.65
Naturally bleached wax	19.91	75.0	94.9	1:3.76
	19.80	74.9	94.7	1:3.78
Chemically bleached wax	21.97	76.4	98.37	1:3.47
	22.00	75.9	97.9	1:3.45
Chemically bleached wax	24.2	74.8	99.0	1:3.09
	23.8	74.5	98.3	1:3.13
	23.9	74·5	98.4	1:3.11

From these figures Buchner concludes that the standard relation in chemically bleached samples must be taken as 1 to 3.2. [In the next following table "1:" in the last column is omitted.]

To test the accuracy of these results some experiments have been made in the laboratory at Helfenberg. Two varieties of genuine yellow wax were started with, and each having been divided into two parts, the one was bleached by the charcoal process, and the other by potassium permanganate. The results obtained from these undoubtedly pure samples contradicted those of Buchner and fully confirmed the original view. They were as follows:

	Density.	1st No.	2d No.	3d No.	Relation.
Yellow wax	0.966	19.6	74.0	93.6	3.77
Wax bleached by charcoal	0.963	20.1	74.0	94.1	3.68
" " " $KMnO_4$	0.963	18.1	72.8	90.9	4.00
Yellow wax, second sample	0.964	20.1	74.8	94.9	3.72
Wax bleached by charcoal	0.963	19.6	74.0	93.6	3.77
" " " $KMnO_4$	0.964	19.1	74.0	93.1	3.87

The figures thus obtained show that the process of bleaching does not increase the specific gravity of wax, as some observers have pretended, and also that the three characteristic numbers are no larger, and are comprised within the same limits as those of ordinary yellow wax. I have lately also had occasion to analyze white wax chemically bleached by the acid process, and the following are the results I obtain:

Specific Gravity	0.966
First Number	20.2
Second Number	76.7
Third Number	96.9
Relation	1: 3.79

These numbers also contradict Buchner's hypothesis, and I am afraid that the so-called pure white wax with which he was supplied was scarcely what it should have been. It is necessary to be very cautious in accepting commercial descriptions, as is shown by the following analysis of two samples of white wax, sold as of a superior quality, but which were evidently very far from meriting the epithet.

First Number	29.7	31.46
Second Number	87.5	76.66
Third Number	117.2	99.1
Relation	1:2.9	1: 2.14

In conclusion I would urge that there is no reason for adopting any different numbers for judging the purity of white wax to those employed in the examination of yellow.—M. H. ROTTGER in *Mon. Scient.* (after *The Analyst*).

Substances Influencing the Odor of Musk.—Quinine sulphate is said to possess the peculiar property of completely destroying the odor of artificial musk, while having no such effect upon the natural product. [This is denied by competent experts.—ED. AM. DRUGG.] Sulphur and camphor produce in natural musk a very offensive odor.

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EDITORIAL.

THE NEW ERA OF INOCULATION.

WHEN England's present poet-laureate wrote in "Locksley Hall" that

> "Science moves but slowly—
> Slowly creeping on from point to point,"

he expressed a truism which is open to some very notable exceptions. While as a rule the announcements of great discoveries in science *have* been made at rare intervals, there have been epochs, on the other hand, when scientific processes seemed to come rapidly "to a head," as is sometimes said of boils and pustules, and when facts of great value have been formulated with an exactness that has added materially to the sum of the world's wisdom.

SOMETIMES, indeed, these "epochs" have been more than epochs, and have expanded into *eras* of development. It is perhaps safe to say that the present time affords an instance of the latter in the number and importance of valuable discoveries. In this article we have reference only to those facts, experiments, etc., that relate to the science of therapeutics or applied medicine, and the mind reverts naturally to the lymph treatment of tuberculosis, lupus, etc., by what may be called the Kochian method. The science of medicine will be led to make its attack on certain diseases—of which phthisis may stand as the general name and type—on entirely different lines. It is an era of warfare against the bacillus and the microbe, the smallest and at the same time the most deadly enemies of humankind.

THE attack on the chinch bug is one of the latest forms of the new crusade that is incidentally for the good of humanity. It is on a parallel line with the treatment of infected human tissue. Prof. F. H. Snow, State Entomologist of Kansas, has been experimenting for two years to perfect his plan for the spreading of a contagious disease among chinch bugs, with a view to exterminating this worst of all the pests with which Western farmers have to contend. Prof. Snow has found that there are three different causes of death among these bugs: First, the attack of "a certain bacterial germ." It is said that myriads of these minute, animated atoms may be seen with a microscope in the body of the diseased bug. The second cause is the growth of "a white fungus, the spores of which are carried by the wind, and are thus easily scattered over the entire field." The third is the presence of "still another fungus, which differs from the white fungus in color." These fungi have scientific names, and have been studied and described by various scientific men. Now, while the chinch bug attacks the wheat and corn, these moulds and bacteria are to attack the chinch bug, and, from the measure of success already achieved, it looks as if the odds are ten to one against the bug.

IN the light of recent developments it looks as if the old saying of "big fish eat little fish" would lose much of its force, and that the truth of the humorous statement in a familiar poem, that

> "The very fleas upon our backs have lesser fleas to bite them,"

receives every day a fresh and startling demonstration. It is the smallest, the most infinitesimal of our enemies that are the most dangerous; while to the devout student of nature it exalts the inscrutable knowledge and illimitable power of Him who is "Great in great things, but greatest in the least."

LYMPH vs. LEPROSY.

NEW-YORKERS were startled just before Christmas by the announcement made in one of the daily papers that a *bona fide* case of leprosy had been discovered in a Chinese laundry on Ninth Avenue near Forty-seventh Street. The stricken Chinaman was removed first to a house on Pell Street, the heart of the Chinese quarter, and was afterwards taken to an isolated ward in Bellevue Hospital, where it was proposed to try experiments with the Koch lymph on his case. The fact that his leprosy was regarded as *incurable* leaves but small grounds to hope for a favorable result. But even should this attempt fail, it may nevertheless be demonstrated in future that *incipient* leprosy, like incipient lupus, may be overcome by this new remedial agent. According to the laws among the Chinese, this poor leper would be in duty bound to commit suicide for the good of his fellow-men so soon as it becomes known that his case is beyond recovery. Unless the wonderful lymph shall destroy the bacilli of this disease, it will matter little to the ill-fated Mongolian whether he be removed by suicide, homicide, or the *pallida mors* of leprosy.

THE LESSON OF FASTING.

THE fact that an Italian man by the name of Succi has just succeeded in abstaining from all solid food, and also all liquids of a nourishing character, during a period of forty-five days in this city, is one well calculated to command at least the passing notice of the medical profession in particular, and other people in general.

The thoughtful observer naturally inquires, *cui bonum?* What is the excuse for such a voluntary act of self-starvation? Does it teach any lesson worth knowing? etc.

TO the first two of these questions there are two ready and obviously reasonable answers. First of all, as to *who is benefited*, it is plain that Signor Succi himself is reaping quite a comfortable reward in the matter of

money. He is now not only a living exemplification of a great scientific fact; he is, what is possibly of more immediate value to himself, "a freak," as it is called—a paying attraction for dime museums, and in that rôle he is the natural successor not only of Dr. Tanner, but of Steve Brodie, "the Bridge Jumper," "Nurse Donnelly," who was nearly stabbed to death in a scandalous fight between two women, and will easily take rank beside the Fat Women, Living Skeletons, Albinos, and "Wild Men of Borneo." This of itself is "a consummation devoutly to be wished" by persons of Signor Succi's adventurous nature and depleted bank account. In the second place, an explanation *may* be found in the desire for notoriety, for fame of some sort, just possibly a real desire to ascertain, *in the interests of science*, the limits of physical vitality when unsupplied with regular nourishment.

Regarding the third and last of these queries, viz.: *What lesson is taught?* the matter assumes a more important and dignified aspect.

A wider scope must hereafter be given to the possibilities of preserving life in cases of enforced abstention from food. If it shall become known by all thinking minds that days and nights, and even weeks, may be passed in safety by persons deprived of food, if only water and a hopeful spirit are present, then indeed lives may be saved that would otherwise perish, and Tanner and Succi have not starved in vain. Up to a very recent period in the world's history, it has generally been believed that ordinary mortals could exist but a very few days and nights without food of a more or less solid character, and that the forty-day period of starvation was possible only to some miraculously sustained people like Christ and Elijah.

Ancient sceptics regarded the stories of forty-day fasts even by these as among the proofs that the Bible was *not* a "Word of Truth." Within a comparatively recent period however, the forty-day record has been repeatedly surpassed, and now this Italian with a healthy stomach and a nerve of steel has raised the figure to forty-five days. Yes, there are some lessons to be learned, but we have not space to enlarge. We will only add that in Succi's starvation act we have a literal, physical illustration of the fact that

"The individual withers, and the world is more and more."

THE NEW YEAR.

ANOTHER mile post counted, another twelvemonth of Life, of History, gone into the irrevocable past, and the AMERICAN DRUGGIST turns over a large-sized "new leaf," and tenders the *compliments of the season* to its friends both new and old.

The journal has put on a new suit of clothes, wears a newer face, and we believe a handsomer one. It is not in accordance with good taste to boast of whatever good work has been done during the year just closed. The record, whatever it be, has been made; it cannot be altered or amended; is beyond the power of any one either to injure or improve.

Hereafter the issue of the 1st of each month may be regarded as more distinctively the commercial and news edition; while that of the 15th will contain a larger proportion of more strictly pharmacological literature. Additional writers have been engaged to provide for this very considerable increase in the amount and character of matter, and every effort will be used to keep pace with the demands of the times.

IT is stated by one of our exchanges that "under the auspices of the Board of Trade and Transportation, a Drug Section has been organized as a near approach to a Drug Exchange in New York City." It is also said that fifty-five prominent firms, representing drug importers, drug jobbers, chemical manufacturers and importers, manufacturing perfumers, and some other allied interests, are engaged in the enterprise. We hope to lay more definite information before our readers ere long.

IN Bellevue Hospital in this city may be seen an embalmed German count, who has been chained to his post for several years, and is as plumb and erect as on the day of his death. As a contribution to science this modern mummy may *count* for more than he did as a living man. It has been suggested, also, that there is now a better chance than ever for Buffalo Bill to secure Sitting Bull's embalmed body for the Wild West Show.

PROFESSOR KOCH advises consumptive Americans to stay at home, as his lymph will be sent to American hospitals as fast as it can be spared.

IF the tubercle bacilli are to be destroyed by injections into human tissue of their own dead, macerated, and extracted selves, and if chinch bugs are to annihilate each other by mutual infection, there may be some ground to hope that a day of reckoning for the Croton bug, the Jersey mosquito, and the omnipresent bedbug is not far away.

THE scientific world may be represented as standing on tiptoe in its anxiety to know the results of the attempts shortly to be made by the new Air Ship Company, of Chicago, to solve the long-vexed question of aërial navigation. Mr. Fred. N. Atwood, who is at the head of the scheme, has every confidence that his new aluminum ships, with their immense fans, cylinders, and reservoirs of hydrogen gas, will soon be sailing serenely through the empyrean. Hurry up the experiment.

The India-Rubber Tree.—Few plants are so well adapted for home decoration as is the india-rubber tree (*Ficus elastica*), and few are so readily grown and cared for, or will produce the same excellent effect if displayed among other plants. Especially attractive are the white and the golden variegated form, the latter being the best. The gold band about the leaves is an inch wide, and forms a beautiful contrast to the dark, shining green of the centre. A desirable species of this genus is *F. stipulata*, a handsome climber with small, round, dark-green leaves that will cling tenaciously to any rough surface. It is excellent for conservatory decoration, where it can remain permanently. The leaves of these plants, not being numerous, can be readily kept free from dust by wiping with a moist sponge. This should also be done with palms and all large-leaved plants, at least once a week.—*Exchange.*

Peanuts.—S. Luckhart, Richmond Co., Va.: There is very little danger of the cultivation of peanuts being overdone while there is such an extensive demand for peanut oil. It is stated on good authority that about six million dollars' worth of peanuts are used annually in Marseilles, France, by the manufacturers of fancy soaps. A bushel of peanuts, subjected to hydraulic pressure, yields a gallon of oil. The oil is also excellent for lubricating purposes, but we have scarcely begun to know what uses to make of this oil here, for, of the three million bushels raised in the Southern States, nearly all are used for food alone, and there is very little surplus for other purposes.

Signor Succi's Fast.

FOR those who care to make a comparative examination of Succi day by day under the influence of utter emptiness, the *Evening World* prepared the following tables. The first shows Succi's weight and temperature at the beginning of the fast, November 5th, and at the end of each successive day of the long abstinence from nourishment. It also shows just how much Croton and mineral waters the iron-willed king of hunger consumed each day since the start. Kaiserbrunnen was favored by Sig. Succi during the first half of his fast, but for the past three weeks he has eschewed it, squirting domestic vichy and seltzer down his lank throat direct from a siphon instead.

Add to this queer diet from 10 to 32 drops of Succi's own elixir, composed of drugs that benumb the stomach and put it to sleep, as it were, each day since the twenty-first of the fast, and a few frigid crumbs of ice each day, and you have what the Italian mystery has lived on just for six weeks and a day.

Succi's ice bill would be for about 9 pounds of that metropolitan luxury, of which he partook as follows:

December 4th, the 28th of the fast, 16 ounces; 29th, 8; 30th, 0; 31st, 12; 32d, 4; 33d, 8; 34th, 10; 35th, 36th, 37th, and 38th days, 8 ounces each; 39th, 17; 40th, 5; 41st, 10; 42d, 7 ounces and 43d, 8 ounces.

Here is the daily scientific record:

Day of Fast.	Pulse.	Weight. lbs. oz.	Ounces of Croton water.	Ounces of mineral water.
At the beginning	98	147.04	....	....
1	79	144.0	3.5	...
2	78	139.12	3.0	....
3	73	136.12	28.0	....
4	64	135.8	4.0	....
5	60	134.0	23.0	....
6	73	132.0	12.0	6.0
7	84	131.0	12.0	8.0
8	71	130.8	10.0	19.0
9	70	129.4	5.0	10.0
10	67	128.4	7.0	24.0
11	65	128.2	6.0	32.0
12	67	127.4	4.0	26.0
13	64	126.8	8.0	22.0
14	63	125.8	4.0	23.0
15	69	125.0	3.0	23.0
16	66	124.0	3.0	11.0
17	77	126.8	4.0	23.0
18	67	122.4	4.0	28.0
19	68	121.15	9.0	21.0
20	64	121.14	3.5	20.0
21	64	120.8	3.0	23.0
22	66	119.14	5.0	20.0
23	72	118 8	6.0	19.0
24	76	117.8	4.0	26.0
25	72	117.0	5.5	28.0
26	66	116.12	6.0	25.0
27	66	116.0	5.0	16.0
28	72	114.8	6.0	4.0
29	63	113.8	3.0	20.0
30	80	112.12	2.5	12.0
31	66	112.0	4.0	21.0
32	59	111.3	4.5	17.0
33	66	111.4	9.5	12.0
34	72	110.14	2.0	34.0
35	72	110.12	9.0	10.0
36	64	110.4	8.0	25.0
37	60	109.8	6.0	24.0
38	77	108.4	15.0	15.0
39	66	107.12	38.0	15.0
40	68	107.12	15.0	2.0
41	63	107.4	14.0	20.0
42	64	107.0	16.0	17.0
43	84	106.12	8.0	22.5

It will be seen by the above table that Succi, laboring under great excitement and overheated by a grand dinner and much wine, had a pulse of 98 beats to the minute at the beginning of his fast. The highest pulse after that was at the end of the first week, 84. Again, on the thirtieth day, when Succi was almost ready to give up, his pulse beat 80 times to the minute. On the fifth and thirty-seventh days of the fast it was down to 60. The rest of the time it was normal, or nearly so.

Succi has gone to bed regularly at 12:30 A.M., and has averaged 8½ hours sleep in each 24.

He has consumed a total of 12 quarts of Croton water, and 25 quarts of mineral water, or about 37 quarts in all.

The following table shows the effects of the fast upon Succi's physique. He was a handsome young man, of a trifle under middle height, compactly and strongly built. He has lost in every point, but is still better than several dead men.

The measurements are given in centimeters, except for height, which is given in feet and inches. A centimeter is equal to a little less than $\frac{2}{5}$ of an inch, or, to be exact, .39371 of an inch.

MEASUREMENTS IN CENTIMETERS.

	Start.	30th Day.	40th Day.	Loss.
Neck	38	33	31	7
Forearm (L)	20	18	18	2
Forearm (R)	21	18¾	18½	2½
Biceps (L)	24½	21¼	20⅝	3⅞
Biceps (R)	25	22	20½	3¾
Chest, empty	85½	77	76½	9
Chest, inflated	90½	82½	80½	10
Abdomen	86½	67	65	21½
Buttocks	94	80¾	84¼	9½
Thigh (each)	54	44	44	10
Calf (each)	33½	30½	29½	4
	Ft. in.	Ft. in.	Ft. in.	In.
Height	5—4	5—3½	5—3½	½

The dynamometer has been used each day and Succi's strength of grip recorded. At the beginning he squeezed 47 Kgm., or about 103 pounds. He squeezed 55 kilos on two or three occasions during the fast, the last time being on the twenty-seventh day. His weakest grip was on the third day of the fast, when he was "sick clear through," and had only a 44-kilo grip.

His respiration has ranged from 13 to 23, 20 being about natural for him. His lungs have been in prime condition, and he has blown up the spirometer from 1,400 to 1,600 C. each day, better than the average man could do with dynamometer or spirometer.

The daily examinations by the physicians have found his tongue natural or only slighted coated.

Gum Benzoin.

GUM BENZOIN is nowadays classed under four varieties. The most valuable is the Siam gum, which is generally imported in cases, into which the drug is sometimes poured in a fluid state, while occasionally it is packed only after it has dried. When placed "on show" for the London auction sales, the cases are emptied and their contents placed on the floor, separated by small boards. The most valuable Siam gum is that which appears in bold, pale, loose, flat tears of a pale orange coat and milk-white fracture; but this variety is rare. The quality next in value is that which appears in an agglutinized mass of tears or "almonds," rather dark in color; and the third grade consists of small or dark tears, either separate or agglutinized, and of a color varying from cinnamon to dark brown. A case of Siam benzoin weighs from 1 to 2 cwt. In former years Siam benzoin was occasionally imported in solid blocks, just as the Sumatra gum is now, and the quality of the consignments has deteriorated of recent years. The Siam gum of commerce is collected in that district of Siam which borders upon Tonquin, east of Luang-Probang. It is brought to the latter place by the Khas tribe, who exchange it for manufactured goods with the Chinese dealers. The latter in their turn take it to Nong-Kai, the terminal point of the trade road to the south, and from there, at great expense of carriage, to Korat, whence, by way of Saraboori and the Nunam River, it is sent to Bangkok. In 1887 the exports from Bangkok were 37,200 kilos, and in 1888, 31,300 kilos.

MEDICAL AND CHEMICAL PATENTS, TRADE MARKS, ETC.

SPECIALLY REPORTED FROM WASHINGTON.

Liquid-evaporating apparatus (3 patents), J. A. Morrell, Lansdale, Pa.

Evaporating liquids, J. A. Morrell, Lansdale, Pa.

Insecticide, F. Jones, Morse, Kan.

Obstetrical forceps, A. B. Lyman, Baltimore, Md.

Making vegetable pepsin, V. Marcano, Caracas, Venezuela.

Making peptones, V. Marcano, Caracas, Venezuela.

Making peptonized meat, V. Marcano, Caracas, Venezuela.

Concentrating solutions and extracting solids therefrom, J. A. Morrell, Caracas, Venezuela.

Concentrating solutions. J. A. Morrell, Caracas, Venezuela.

Syringe (2 patents), W. W. Guptill, Boston, Mass.

Artificial tooth, F. T. Van Woert, Brooklyn, N. Y.

Dose-measuring bottle, H. S. Herrick, San Francisco, Cal.

Dental pluggers, J. L. Mewborn, Memphis, Tenn.

Disinfecting apparatus, F. J. Mitchell, New York, N. Y.

Red dye, C. Dreyfus, Clayton, Eng.

Mixing and tempering linseed meal, O. R. Nelson, Chicago, Ill.

Temperature regulator for liquids, F. V. Bulckens, Oregon, Ill.

Nursing-bottle holder, J. Von Huppmann-Valbella, New York, N. Y.

Forceps for dental wedges, G. J. Davison, Richmond, Va.

Surgical bandage winder, W. Gilfillan, Steinway, N. Y.

Vaginal syringe, J. R. Trott, Morrisonville, Ill.

Bleaching hair, F. G. Wiselogel, Indianapolis, Ind.

Ammonia still, F. Kaiser, Knoxville, Tenn.

Atomizer, J. Schoetti, Brooklyn, N. Y.

Capsule press, F. W. Perry, Philadelphia, Pa.

Draught tube for effervescing drinks, W. P. Clark, Medford, Mass.

Liniment, D. Meinen, Warrenton, Tex.

Device for facilitating pills, J. Yates, London, Eng.

Syringe, E. Bartsch, San Francisco, Cal.

Trade Marks.

Bromide and Lithia Waters, Bowden Lithia Springs Co., Lithia Springs, Ga. (The words "Georgia Bromide Lithia [Salt Springs] Water" and the representation of a spring house, the prominent features of the construction thereof comprising two gables in the roof and open-work below the roof.)

Medical compounds for antithermic, antirheumatic, and antiseptic uses, F. von Heyden, Nachfolger, Radebeul, near Dresden, Germany. (The word "Euphorine.")

Antiseptic, C. J. Rademaker, Louisville, Ky. (The word "Bromole.")

Medical tonics, S. Peters, Cornwall, Pa. (The word "H. L. P." in the form of a monogram.)

Liquid remedy for diseases of the eye, E. H. Burnham, Boston, Mass. (The pictorial representation of an eye combined with a protractor instrument having radii converging to and terminating in the pupil of the eye.)

Remedies for diseases of the feet, J. F. Murphy, New Orleans, La. (The word "Creole.")

Remedy for certain named diseases, W. R. Hayden, Bedford, Springs, Mass. (The letters "H. V. C.")

Tonic for debility in females, Balm of Gilead Co., New York, N. Y. (The words "Balm of Gilead" and the pictorial representation of a resurrection flower, known also as the "resurrection rose of Jerico.")

Stomach bitters, J. Thielen, Oshkosh, Wis. (The pictorial representation of an alchemist seated upon a pile of books and holding with one hand an herb, and with the other hand holding upon his knee an open book, and having at one side of him a still and at his feet in front of him a pair of scales, the pictorial representation being partially surrounded by a series of medals.)

Medicinal cure for gonorrhœa, B. D. Bell, Lexington, Ky. (The words "Stop It Sure," with the word "Sure" arranged across the face of the words "Stop It.")

Cough syrup, Murphy Bros., Jamestown, O. (The words "Persian Cough Syrup.")

Topical remedy for the cure of corns and other callosities, The Clark Johnson Medicine Co., New York, N. Y. (The words "Dr. Clark Johnson's Indian Blood Syrup," and the representation of an Indian.)

Remedy for bronchial affections, J. Easton, Brockville, Can. (A monogram of the letters "J. E.")

External application for the cure of headache, J. H. Lakin, Boston, Mass. (The words "Hedake Kolone.")

Condition powders to cure hog cholera, A. J. Van Syckle, St. Mary's, Kan. (The representation of hog bearing the words "Van Cholera Cure" and the figure of a sickle.)

Medical preparations for lung diseases, F. Leitch, Turtle Point, Pa. (The pictorial representation of a globe surrounded by a band studded with bottles in imitation of handles of a steering wheel, two sailor boys above the globe at the wheel, the whole floating within clouds.)

Liquid perfumery, French, Richards & Co., Philadelphia, Pa. (The words "Sweet Chimes.")

Liquid perfumery, French, Richards & Co., Philadelphia, Pa. (The words "White Musk.")

Pine essence for external use in disease, G. & G. Stern, London, Eng. (The word "Pumiline.")

Remedy for hay-fever, G. W. Wilms, Jersey City, N. J. (The word "Peshall's.")

Medicated tablets for female diseases, G. L. F. Hager, South Bend, Ind. (The words "Oak Balm.")

Remedy for epilepsy and other nervous diseases, S. A. Richmond, Tuscola, Ill. (The representation of a fountain and landscape, the words "Samaritan Nervine," and the motto "In God we Trust.")

Remedy for small-pox, J. L. Suasnavar, New York, N. Y. (A monogram of the letters "J. L. S." and the signature of Jose Leandro Susanavar written across it.)

Lime-water preparations, T. Metcalf & Co., Boston, Mass. (The word "Anticidine.")

Disinfectants, Schulke & Mayr, Hamburg, Germany. (The word "Lysol.")

Remedy for catarrh, J. Stackhouse, Philadelphia, Pa. (The word "Oswi")

Labels.

"Lameraux' Antiseptic," J. Lameraux, Montgomery, Ala.

"Dr. Stephens' Buckeye Cough Cure," A. F. Stephens, St. Joseph, Mo.

"Curtis' Spruce Balsam" (for medicine), G. S. Curtis, Peabody, Mass.

"Crane's Infallible Rheumatic Remedy," O. Crane, Brooklyn, N. Y.

"Dr. Aberle's Coffee Tonic," J. Aberle, Cleveland, O.

"Positivus Catarrh Remedy," C. S. Ely, Milton, Pa.

"Dr. Pendlebury's Wonderful Pectoral Cough Cure," E. H. Merritt, New York, N. Y.

"Bush's Liquid Beef," Bush & Talbot, Boston, Mass.

"Calisaya Tonic Bitters," A. C. Peckham's Sons, St. Louis, Mo.

"White Musk" (for perfumery), French, Richards & Co., Philadelphia, Pa.

"Peshall's Remedy for Hay-Fever," G. W. Wilms, Jersey City, N. J.

"Noyes' Granular Effervescent Magnesia Sulphate," The P. J. Noyes Manufacturing Co., Lancaster, N. H., and Boston, Mass.

"Cream of Almonds" (for the toilet), Van Dyke Bros., Philadelphia, Pa.

SIR MORELL MACKENZIE has experimented with the Koch lymph, with marked success, on several cases of lupus and phthisis in London.

THE EMPRESS has placed $250,000, together with the hospital grounds at Lichterfeldt, at the disposal of Minister Gossler to be used in the interest of Prof. Koch.

THE KOCH lymph is having several very fair tests in this country, in New York, Philadelphia, New Haven, Baltimore and elsewhere, and in the majority of cases a marked improvement has been noted in the condition of the inoculated patients.

PROF. BILLROTH, becoming alarmed over some cases that resulted fatally where lupus was treated with Dr. Koch's lymph, suspended his treatment with several of his patients who were suffering from advanced stages of this disease.

The Output of Platinum.

In view of the recent enormous advance in the price of platinum, the following figures, showing the output of the crude ore in Russia, are of interest: In 1881, 2,986 kilos were produced; in 1882, 4,081 kilos; in 1883, 3,537 kilos; in 1884, 2,237 kilos; in 1885, 2.591 kilos; and in 1886, 4,317 kilos, or an average of hardly 660 cwt. a year. All this platinum is found in two districts of the government of Perm. The mines of Goroblagodsk yield about two thirds, those of Nigi-Taguitsk one-third of the supply. The syndicate which is said to be cornering the platinum supply have, no doubt, in view the enormously growing demand for platinum for electric industries; but the cut-throat policy they are reported to pursue is likely to have the effect of stimulating the working of platinum deposits in other parts of the world, as well as of putting electricians on their mettle in finding a substitute for platinum.

In the Ural mines, until some years ago, platinum was obtained as a kind of by-product in the working of the auriferous deposits, the existence of which led to the opening of these mines; but during the last few years the gold ore has become much scarcer, and platinum has superseded gold as the principal product of the mines. Besides the operations of the syndicate, the recent advance in the metal is attributed to the increasing scarcity of the ore and to the fact that labor, always an uncertain factor in the Ural mines, has become excessively scarce since the commencement of the Trans-Siberian Railway.

News comes opportunely from Mexico of the discovery of platinum in the ores extracted from certain mines in Sinaloa, a State famous for its mineral wealth.—*Chem. and Drugg.*

The British Pharmaceutical Conference will meet in 1891 in Cardiff, Wales, a city of about 130,000 inhabitants, and the largest in the province. The officers elected are: President—Mr. Wm. Martindale, F.C.S.; Vice-Presidents—Messrs. Carteighe, Kinninmont, Dr. Thresh, and Mr. Munday; Treasurer—Mr. Davies; Hon. Gen. Sec's—Messrs. Naylor and Ransom; Other Members of the Executive Committee—Prof. Green, Messrs. Gerrard, Kirkby, Dott, Martin, Holmes, Branson, Ward, and Alderman Yoruth; Hon. Local Sec'y—Mr. Alfred Coleman; Auditors—Mr. David Anthony and Mr. Yewdall.

Pharmacopœial Uniformity.—The pharmacists assembled in the Pharmacological Section of the late International Medical Congress thought it wise to carry forward the consideration of an International Pharmacopœia to the Scientists' Congress, and the subject was therefore again brought up at the recent gathering of that body at Bremen. Every one was aware, of course, of the work done on these lines by Von Waldheim for the International Pharmaceutical Congress some years ago, but it was felt that the scheme ought to be designed on new principles, as a considerable time has since elapsed. Dr. Hirsch, author of the "Universal Pharmacopœia," and Dr. Thoms have been appointed to carry out the preliminary work and bring the result before the Congress next year. It is only designed to bring about uniformity among the most potent preparations; a complete International Pharmacopœia is not thought of.—After *Chem. and Drugg.*

Potassium Tellurate in Phthisis.—Potassium tellurate has been experimented with by Dr. Neusser in the treatment of phthisis, in the expectation that it might act as a bactericide (*Lancet*, August 16th, page 365). He reports that he administered it in about fifty cases, and that in by far the greater number one-third of a grain, given daily in a pill, was sufficient to arrest the sweats or moderate them very perceptibly. In a few instances it was necessary to double the dose, but this quantity was usually sufficient to produce the result desired. Toxic symptoms were never observed until at least a grain had been given daily for a considerable time, indigestion being then set up.

The remedy has, however, the drawback of imparting to the breath the disagreeable garlic odor characteristic of tellurium compounds.—After *Pharm. Journ.*

FORMULAS.

We copy some simple and useful formulas from the latest issue of the *Chemist and Druggist:*

CHILBLAIN REMEDIES.

Liniment.

Camphor	2 drachms
Cantharides	2 "
Table Mustard	4 "
Oil of Cajuput	1 "
Oil of Rosemary	3 "
Alkanet	2 "
Oil of Turpentine	10 ounces

Macerate for ten days with frequent agitation.

This liniment is to be applied to the skin by friction night and morning. It has the advantage over many liniments in being comparatively harmless, and it is at the same time efficacious.

EARACHE DROPS.

Camphor-Chloral	5 minims
Glycerin	33 "
Almond Oil	20 "

Mix. Three drops of this mixture on absorbent cotton to be placed in the ear twice a day.

GLYCERIN JELLY.

A favorite preparation for winter use, being a soothing and healing application for the chapped skin. There are numerous formulas, but the following are among the best:

Plain.

Thin French Gelatin	½ ounces
Water	5 "
Glycerin of Borax	10 "
Triple Rose Water	6 "

Soak the gelatin with the water all night in a gallipot, and next morning place the pot in a saucepan with water and heat until dissolved; then add the glycerin and the rose water. Mix. May be colored with cochineal or a little saffron.

Carbolated.

Isinglass	1 ounce
Glycerin	16 "
Water	3 "
Carbolic Acid	1 drachm

Prepare as above.

Solid.

French Gelatin	120 grains
Glycerin	1½ ounces
Water	½ "
Otto of Rose	1 drop

Make in the usual way, adding the otto when the jelly is lukewarm, and pour into moulds, such as cosmetic cases. To be used in the same way as camphor ball, the skin being first moistened, or may be used before drying the hands after washing.

ESSENCE OF RENNET.

Take one calf's stomach, cut it into twenty pieces, and rub with 6 ounces of salt. Let stand over night, then digest in 36 ounces of water for at least a week—but it *may* stand for a month or two—then strain, and to the strained liquor add the following:

Oil of Pimento	12 drops
Oil of Bitter Almonds	12 "
Oil of Nutmeg	12 "
Oil of Cloves	12 "
Oil of Lemon	12 "
Rectified Spirit	4 ounces

ilter through lampblack.

This essence has kept good for three years. A tablespoonful of it is sufficient for a quart of junket.

FURNITURE OIL.

Linseed Oil	15 ounces
Turpentine	10 "
Vinegar	3 "
Methylated Spirit	3 "
Butter of Antimony	1 "
Camphor	1 drachm
Sal Ammoniac	3 "

Dissolve the camphor in the spirit, and the sal ammoniac in the vinegar. Mix the ingredients in the order of the recipe.

CHLOROFORM OINTMENT.

In a paper read at the recent meeting of German Physicists and Physicians, Mr. Kittl suggested that, as such applications owe their efficacy to the slow evaporation of the chloroform, thicker media than the oil generally used should be employed, so as to prolong the action of the chloroform.

For three or four years he has made ointments according to the subjoined formula, and they have been used with good results by medical men.

Chloroform	1 part (by weight).
Wax	1 " "
Lard	2½ to 3 parts " "

This is generally used for rheumatic affections. A harder salve is made with the same proportions of wax and chloroform, but with 1¼, 1½, and 2 parts of lard. The way to make the ointment is to melt the lard and wax in a stoppered bottle, and when cold stir in the chloroform with a spatula. The ointment is applied to the affected part on lint.

The Otis Steel Company, of Cleveland, which has the largest plate mill in the world, a few days ago rolled a 20-inch ingot of 8,500 pounds down to ¼-inch plate with one heat. Some of the members of the Iron and Steel Institute, who visited these works during their tour of inspection in this country, were surprised at seeing plates rolled direct from the ingots without being hammered or otherwise prepared.

Filling for Dry Batteries.—A new mixture for filling dry cells, prepared by Mr. A. V. Meserole, of New York City, consists of the following solid ingredients in the form of powder: Charcoal, 3 parts; mineral carbon, or graphite, 1 part; peroxide of manganese, 3 parts; lime hydrate, 1 part; white arsenic (oxide), 1 part; and a mixture of glucose and dextrin or starch, 1 part—all by weight. These are intimately mixed dry, and then worked into a paste of proper consistence with a fluid solution composed of equal parts of a saturated solution of chloride of ammonium and chloride of sodium in water, to which are added $\frac{1}{10}$ volume of a solution of bichloride of mercury and an equal volume of hydrochloric acid. The fluid is added gradually and the mass well worked up.—*Scient. Amer.*

NEWS ITEMS, CURRENT EVENTS.

PHARMACEUTICAL ASSOCIATIONS.—DATES OF MEETING, 1891.

	Place and Time of Meeting.	Secretary.	Local Secretary.	Pharmacy Law.
American	New Orleans, La., April 27th	John M. Maisch, Philadelphia.	A. K. Finlay, New Orleans	
National Wholesale.	Louisville, Ky	A. B. Merriam, Minneapolis, Minn		
States.				
Alabama	Huntsville, May 12th	P. C. Candidus, Mobile	J. L. Risin, Huntsville	Yes.
Arkansas	*Hot Springs, May	J. W. Biedelman, Little Rock		No.
California	*San Francisco	D. D. Hunt, San Francisco		No.
Colorado	Colorado Springs, September 8th	F. A. Lyneman, Denver	G. B. Storer, Colorado Springs.	Yes.
Connecticut	New Haven, February 3d	F. Wilcox, Danbury	J. S. Coburn, New Haven	Yes.
Dakota, North	*	L. C. Christianson, Fargo		Yes.
Dakota, South	Madison, August 18th	J. A. Kieth, Lake Preston	M. A. Bartlett, Madison	Yes.
Delaware	Wilmington, May 7th	J. M. Harvey, Wilmington		Yes.
District of Columbia.	No association			Yes.
Florida	Jacksonville, May 20th	S. P. Watson, Jacksonville		Yes.
Georgia	Augusta, May 14th	H. R. Slack, Jr., La Grange		Yes.
Illinois	Kankakee, August 18th	C. S. Hallberg, Chicago	F. Fries, Kankakee	Yes.
Indiana	Indianapolis, May 12th	J. R. Perry, Indianapolis		No.
Iowa	*	Mrs. R. Upson, Marshalltown		Yes.
Kansas	Ottawa, May 21st	J. T. Moore, Lawrence		Yes.
Kentucky	*	J. S. Smith, Lexington		Yes.
Louisiana	New Orleans, April 8th	Mrs. E. Rudolph, New Orleans.		Yes.
Maine	*	H. T. Cummings, Portland		Yes.
Maryland	*Baltimore	J. W. Gieger, Baltimore	Pharmacy law in Balti	more only.
Massachusetts	Boston, June	J. W. Colcord, Boston		Yes.
Michigan	Ann Arbor, October.	C. A. Bugbee, Sheboygan		Yes.
Minnesota	*	W. K. Hicks, Minneapolis.		Yes.
Missouri	Excelsior Springs, June 9th	G. H. C. Klie, St. Louis	M. Cravens	Yes.
Nebraska	Beatrice, May 26th	Mrs. J. M. Crissey, Omaha	J. D. Rainey, Beatrice	Yes.
New Hampshire	Exeter, September 8th	S. H. Bell, Derry		Yes.
New Jersey	Trenton, May 20th	C. F. Dare, Bridgeton		Yes.
New York	Bluff Point, near Plattsburg, June 23d	Clay W. Holmes, Elmira	J. H. Smith, Plattsburg	Yes.
North Carolina	Morehead City, July	F. W. Hancock, New Berne	R. J. Gooding, New Berne	Yes.
Ohio	Dayton, June 9th	L. C. Hopp, Cleveland		Yes.
Oregon	Portland, June 9th	H. D. Diedrich, Portland		No.
Pennsylvania	Bedford Springs, June 23d	J. A. Miller, Harrisburg		Yes.
Rhode Island	Providence, January	W. E. Cates, Providence		Yes.
South Carolina	*	P. Wineman, Charleston		Yes.
Tennessee	Knoxville, May 20th	J. L. Thompson, Nashville		No.
Texas	Houston, May 12th	L. M. Connor, Dallas	J. Burheim, Houston	Yes.
Virginia	Roanoke, September 8th	C. B. Fleet, Lynchburg		Yes.
Washington	Ellensburg, May 11th	W. St. John, Tacoma		Yes.
Wisconsin	Milwaukee, August 11th	E. B. Heimstreet, Janesville.	J. Kienth, Milwaukee	No.

* Date not fixed.

—*Pharmaceutical Record.*

CHICAGO NOTES.

Fred. A. Rometsch is at present in charge of the prescription department at Fish, Joseph & Co.'s.

Henry Schroeder sold his store at Division street and Milwaukee Avenue to F. J. Lichtenberger & Co.

The examinations of the Board of Pharmacy were conducted at the Grand Pacific Hotel of this city on November 11th, 12th, and 13th; 21 applicants were awarded the certificate of registered pharmacist and 29 the certificate of assistant pharmacist.

Chas. W. Day, President of the Illinois Board of Pharmacy, was married recently to Miss Elizabeth Fowler.

V. P. McDowell opened a new store at the corner of Oak and State streets.

Dr. J. A. Lydston, a graduate of the Chicago College of Pharmacy, is now demonstrator of chemistry at the College of Physicians and Surgeons.

A. G. Luning disposed of his store at Lincoln and Diversey avenues to E. Weber.

A. C. Brendecke purchased the store of Fred. Eberlein at the corner of Madison and Clinton streets.

W. H. Mueller has established a pharmacy at the corner of Halsted street and Diversey avenue.

The suit against A. S. Cowan, 100 North State street, by a woman who some time ago fell through a register hole in his store, was recently brought to trial. The case was continued owing to the disagreement of the jury.

Carl Lindemann purchased the store of Dr. S. S. Hurstat, 51st street and Wentworth avenue.

The report of the proceedings of the Illinois Pharmaceutical Association for the years 1889 and 1890 are now ready for distribution and may be had by addressing Secretary Hallberg.

W. H. Stolte was quite ill with typhoid fever. At last accounts he was convalescing.

F. F. Seville was married recently to Miss Addie Beggs.

The constitution and by-laws of the Diastase Club have been thoroughly revised and published in neat pamphlet form for the use of members. In this pamphlet we observe such words as "Molecule," "Atom," "Element," "Pharmic Supreme," "Medic Supreme," etc. The meetings are occasions for gregarious pharmacists to worship at the shrine of Gambrinus, the rules of the club not permitting this to be done to excess, however. These meetings are held bi-weekly.

Judson S. Jacobus has opened a new pharmacy at 75 43d street.

F. W. Buescher & Co. now occupy the store formerly owned by Frank G. Somers at 315 Chicago avenue.

Albert J. Kettering has opened a new store at 2901 Wallace street.

E. J. Healy & Co. now occupy the store at 201 South Halsted street.

I. J. Heckman has established a new pharmacy at 6616 State street.

Cornelius Vanderpoel has removed his pharmacy to 1157 Western avenue.

M. L. Brauns has opened a new pharmacy at 1119 California avenue.

Geo. R. Basset and R. V. Bachelle have also established new pharmacies, the former at 1324 Ogden avenue, the latter at Marshfield avenue and Taylor street.

John L. Rudolphy, who died during the month of October, was well known in pharmaceutical circles throughout this country. Born in the province of Hanover, Germany, in 1819, he became an apothecary's apprentice and graduated at the University of Goettingen in 1837. He removed to this country in 1850, and was started in business in New York City at Sixth avenue and Fourth street by a cousin. He branched from the retail drug business into the rectification of essential oils, and was quite prosperous until the year 1856, when an explosion of oil occurred which caused a ruin of the entire stock and building and nearly blinded him. As soon as his eyes were sufficiently recovered, he was re-established in business on the same corner by a friend. In addition to the retail business conducted, he did some wholesaling and importing with the co-partnership of Julius Zoeller. In 1875 financial disasters again overtook him and swept away all his possessions. Coming to Chicago soon after, he was established in the drug business at Halsted and Taylor streets, where he remained until the time of his demise. He leaves six sons and two daughters, all of the former being connected with the drug trade in some capacity. He was the compiler of the "Pharmaceutical Directory" and the "Pharmaceutical and Chemical Directory."

Special lectures on physics, physiology, and bacteriology are being delivered at the Chicago College of Pharmacy. Other special lectures will be delivered after January 1st on various topics, including "Fragmentary Notes on Pharmacy" by Prof. Albert E. Ebert, "Urinalysis" by A. E. Hiss, "The Polariscope and Its Application," "The Pharmaceutical Chemistry of the Stock Yards," etc.

Emil Thiele, the Archer avenue druggist, was elected State senator, and Victor Bardonski, of 615 Noble street, county commissioner. Both gentlemen are graduates of the Chicago College of Pharmacy.

H. S. Maynard sold his store on West Randolph street to J. R. Shinn, as he intends to devote his entire time to manufacturing pharmacy.

Matthew Warner, of Lemont, entered suit against Nicholas Bartz, another pharmacist of the same town, and a former clerk

DETROIT NOTES.

Messrs. Urisinger & Fluegel have a very tasteful exhibit of toilet articles for the holiday trade in their windows, consisting of manicure sets, shaving mugs, toilet cases, perfumery, etc., appropriately arranged against a background of olive green. The arrangement reflects great credit upon the designer, and will undoubtedly be the means of drawing numerous customers to this already popular pharmacy.

Mr. Henry J. Milburn, druggist, has a fine stock of seasonable and salable articles. Mr. Milburn is the originator of the "Wild Flowers of India" perfumes, with which he has made a decided hit.

The ever genial Fred. D. Stevens is on deck as usual with an elaborate, costly, and well-selected line of holiday goods, arranged in such lavish profusion as to dazzle the eyes of many an unsuspecting pedestrian who, stopping just for a moment to view the gorgeous treat, is finally lured into the store, unable to withstand this tempting bait so skilfully laid by the crafty Fred. In this manner do the bold but honest pharmacists of this city wring many a welcome dollar from the unwilling hand of sturdy toil.

The many friends of Dr. F. Hogguer, who for a number of years had a drug store on Monroe ave., will be glad to learn that, becoming disgusted with a life of innocuous desuetude, he has decided to again embark in business, this time on Gratiot ave. Dr. Hogguer has been out of active business for about three years, during which time he has travelled extensively throughout Europe and his native land, France. He re-enters the field with all his old-time vigor and an experience ripened by his valuable observations and study of the methods and manners of Continental pharmacists, and promises to start in right on top, and stay there, too. If the wishes of his friends count for anything, the doctor will score the biggest kind of a success.

Mr. A. A. Brown, who recently moved to Detroit from Marquette, occupying Mueller's old stand, reports business as booming. He is the proprietor of the well-known "Alpha Headache Wafers," from the sale of which he has already amassed a considerable fortune; and if the demand for them continues to increase at the present rate, Mr. Brown at no very distant date will probably be numbered among Detroit's millionaires.

Mr. F. W. R. Perry, who is one of the most prominent members of the Detroit Pharmaceutical Association, and to whose push and enterprise the present flourishing condition of the association is largely due, has laid in a stock of pleasing novelties and reports holiday trade as good.

Mr. Al. Burbank, the prominent and flourishing druggist of Parma, was in the city for a few days making his winter purchases. He reports trade as brisk, and says next season will witness the greatest revival in business the drug trade has seen for many a year.

Mr. Geo. D. Jones has purchased the stock of Begraw Bros'. west side pharmacy, and expresses himself as well pleased with his new departure.

"Footine" is the suggestive title of a new remedy which has lately made its appearance in this vicinity, and which for unique and "artistic" advertising certainly jerks the Johnnycake.

The advertisement generally consists of this dainty motto, so terse and yet so fraught with meaning, "If your feet stink, use Footine." Evidently the proprietors are making a determined bid for that exclusive class of trade known as the *bon-ton*, and the indications are they will get there with both feet, even if they do stink.

NEW ENGLAND NOTES.

The State Board of Pharmacy of Massachusetts, in presenting its annual report to the governor, asks for additional legislation, which, it claims, is needed to enable it to enforce its provisions. That is, it asks an amendment to existing laws requiring, as in most of the other States, an annual re-registry by holders of certificates, and the payment of a small fee, say 50 cents or $1. It does not intend, as many conjecture, an annual re-examiaation. That the Board is cramped for funds to more carefully carry out the provisions of the law is without doubt true, the only revenue being derived from the fees received from applicants for certificates. The law regarding registered clerks, and even proprietors, is broken so openly as to be common talk.

The Board is not altogether to blame for claiming that its functions are more educational than correctional, and, still further, in the fact that it gets no assistance from local druggists who are conversant with the facts, and can easily procure testimony which the Board cannot, while no funds are at its disposal for legal employment. The Connecticut Board, even *with* funds at its disposal, finds it difficult to punish offenders. It secured evidence against one man who owned several stores, and who, having but one registered clerk, openly defied it, claiming that he was only required to keep one registered clerk. The district attorney's attention was called to it, and he was requested to prosecute; but so far, after nearly a year, nothing has been done, although each store has now a registered clerk. The district attorney is said to be an intimate friend of the druggist and a frequent recipient of his hospitality.

It is reported that two of the best examinations passed in the Massachusetts Board were by parties who had *never done a day's work in a drug store.* If some practical method of actual store work could supplant or supplement the present method of questions, it would seem to be fairer. The Rhode Island Board has had an adverse decision, the court ruling that even if the Board knew that a drug store was to be opened as a dram shop, and the man passed the examination, it had no right to withhold the certificate of registration.

Much interest is apparently being manifested in the results of the action taken by the Massachusetts State Pharmaceutical Association at the special meeting held in Boston December 2d. There were a large number present, seven new members being admitted. A committee of fifteen was appointed to canvass the retail trade, to see how many would take stock in the new co-operative scheme. If enough subscribers can be obtained to warrant it, a separate corporation is to be formed, with shares at $25 each, for co-operative manufacturing of proprietary medicines, and no one can hold more than four shares.

The plan is about as follows: A committee of the leading pharmacists of the State will be appointed to receive and examine samples and formulas of such articles, to the number of about fifty different lines, including sarsaparillas, cough syrups, pills, etc., and what appears to be the best in each line will be selected, and the party submitting will be allowed to manufacture at a low price for the corporation. The members of the corporation will be charged a small advance, which will be used for expenses and in advertising. All dealings will be for cash. None but members will be able to obtain the goods, and shareholders will have to pledge themselves not to break prices. They will be afforded, on the average, about 100 per cent profit.

Every one present at the meeting is said to have agreed to take a share of the stock. A plan of advertising, as yet not fully developed, will be employed to aid sales. Labels, wrappers, etc., will be uniform. Properly managed it would seem to be feasible and cannot help making its power felt.

The action of the Albany druggists is being discussed all over New England, and so far as I can learn it is commended.

It would seem to be time that leading proprietors of patent medicines took some collective action in their own behalf to put a stop to the ruinous slaughter of their preparations, or see them entirely forced out of the hands of the retail druggists.

The Massachusetts Institute of Technology is now entering on its second quarter-century of existence. Its early history was excellently summarized in an address delivered last June at its twenty-fifth anniversary. It was founded by Prof. William B. Rogers, a native of Virginia, formerly director of the Virginia Geological Survey, and Professor of Chemistry and Physics in the University of Virginia. After a hard struggle it began to be more prosperous, and in 1879 entered on its new career, with about 200 students. It now has about 1,000 students. Its present president, Gen. Francis A. Walker, was the superintendent of the census of 1880.

The Trustees and Faculty of the Massachusetts College of Pharmacy are to give Mr. Henry Canning, for many years President of the College, a complimentary dinner on January 8th, 1891, as a testimonial of their appreciation of his valuable services to the College.

Mr. Max Cramer has been elected a Trustee of the College. Mr. Cramer is a well-known German pharmacist, and has been in business in Boston for many years.

S. S. Bradford, Ph.G., of Charlestown, Mass., has presented to the College a very old jar, such as were commonly used by pharmacists over a hundred years ago. It was imported from Holland over a hundred years ago.

The class of 1890 have organized with the following officers: President, I. A. Harris; Vice-Presidents, Fred'k P. Brooks, Frank T. Crane; Secretary, Chas. A. Ward; Treasurer, Frank T. Crane.

Mr. W. L. Sadler, of Springfield, on account of ill health has decided to close up his Worcester store that he purchased of Bradt & Flint a few months since.

Dr. Cannon has sold the Briggs store that he purchased a month ago in Meriden to Merrill Bros.

Mr. W. G. Hunter, who conducts stores in New Britain and New Haven, will soon open a new store in Fairhaven.

Davis & Young are just opening one of the handsomest stores in the city of Lynn.

Two new stores have just been opened in Marlboro.

Quite a number of the fraternity were successful at the recent municipal elections in Massachusetts. M. J. Griffin secured the mayorship in Holyoke, while a number were elected as aldermen and councilmen.

Notwithstanding the judgment against the firm of Weeks & Potter, the well-known jobbers of Boston, to the tune of $60,000 by the estate of the late Leopold Babo, they still do business at the old stand. The plaintiffs state that the defendants had fraudulently secured and sold preparations which Mr. Babo claimed as his. It has been in the courts a long time, but is finally settled.

C. J. Dwyer has opened a new drug store in Marlboro, Mass.

Frank H. Howe has opened a new drug store at corner Franklin and Braintree sts., Allston Station, Boston, Mass. C. H. Bangs furnished the fittings, which are of mahogany.

Mr. Bangs has also been engaged in fitting up an elegant store on Cottage street, Boston Highlands, Mass., for Mr. F. M. Loring, formerly of Malden.

Mr. Kilbride, formerly manager of the People's Drug Store of Waterbury, Conn., opens a store of his own on East Main street, in that city, on January 1st.

The Boston Druggists' Association had a pleasant social time at Young's Hotel at their last meeting, November 25th. They will hold another session on the 8th of January. Young's is a popular place for meetings of this kind.

Benjamin L. Hughes, of Beacon street, Brookline, Mass., who formerly did business in Florida, is having an elegant new store fitted up by Bangs.

Prof. S. A. D. Sheppard, of Boston, has found another helpmate for the duties and participant in the pleasures of life, for which he is receiving the congratulations of his many friends.

The J. C. Ayer Co., of Lowell, has just sent out to the wholesale druggists of the country a business manifesto relative to the preservation of prices on the goods manufactured by the company. Ayer & Co. seem determined to hold faith with the wholesale druggists, even if it costs them (the manufacturers) the good-will and patronage of the "sutler shops" throughout the country. If all other concerns that depend mainly on the drug trade will follow this example, the difficulties involved in the question of cutting rates will soon disappear.

NEW JERSEY NOTES.

Henry Williams, the druggist, indicted by the Monmouth County (N. J.) Grand Jury for selling liquor without a license at Asbury Park, was convicted December 16th, and has been sentenced. His is the first case in which a druggist accused of defying the prohibitory laws of Asbury Park has been convicted. He made no de fence.

From October, 1889, to October, 1890, 411 tons of ivory, at $5,000 per ton, had been sold in London. Half of this amount came from Asia and half from Africa.

"Prof. Rowland's Thermometer," at the Johns Hopkins University, Baltimore, is the most perfect instrument of the kind in the country, and is valued at $1 ,000. The graduatious on the glass can only be read by a microscope, they being too fine for the naked eye.

Wooden spoon making is an extensive industry in Russia, 30,000,000 being the annual product. It will be remembered that it was one of these household utensils with which Mrs. Squeers, of Dotheboys Hall, used to tap reluctant pupils on the head when they hesitated to swallow their brimstone and molasses.

Maine seems to be headquarters for centenarians. They number twenty at present, some of whom have passed the century by several years. The women belonging to this ancient squad outnumber the men nearly two to one, which somehow seems to upset the "weaker sex" notion, physically at least.

ITEMS FOR THE ORDER BOOK.

The Eureka speaks for itself. It is the name of the handsome new soda fountain shown in the ad. of A. D. Puffer & Sons M'f'g Co. on page 7. Write to them for particulars.

A new Suppository Machine will be found illustrated on page 8, in the "ad." of Whitall, Tatum & Co., and also a Hard-rubber Tablet Mould for making 50 one-grain triturate tablets. In fact, you will always find something interesting on that page.

Do you keep Julius Fehr's "Compound Talcum Baby Powder"? Of course you do, but how is your supply? You want to look after that. The chilling, chapping winds of winter will create extra demands for protective powders, and there is none better than this. See the "ad." on page 20.

When your customers call for Pepsin, you will naturally look for something that has an established reputation. Among the many preparations of this valuable article none take higher rank than those of Fairchild Bros. & Foster.

When a thing is done it should be *well* done, and that is the idea upon which the firm of Robert M. Green Co., of Philadelphia, proceed in the construction of their world-renowned soda fountains. "The Oregon," shown on page 19, is a late specimen of the kind of soda apparatus turned out by them.

Nearly every lady in the land, yes, in *all* civilized lands, knows about "Saunders' Face Powder or Bloom of Ninon." We call attention of druggists again to the card on page 24.

Some handsome illustrations of the immense laboratories, office, store, warehouses, etc., of Burroughs, Wellcome & Co , of Snow Hill, England, are contained in the late number of the London *Chemist and Druggist*. If you wish to open any correspondence with the English and foreign trade, Messrs. B. & W. are the proper parties to consult. Their address is given on our front cover page.

When you want Alcohol, Cologne Spirit, Turpentine, etc., remember that James A. Webb & Son, of 165 Pearl street, "hold the fort" in these lines. Their card may be found on front cover and also on page 9.

It is the early bird, they say, that gets wormy, and Messrs. Beach & Clarridge, of Boston, manufacturers of Fruit Juices and Soda Fountain Drinks, are evidently after the worms. This enterprising house, in addition to their card on front cover, have a two-page announcement in this issue, one showing the inside of their immense laboratories and another page giving a list of beverages prepared by them for the trade of 1891. The business of this house has grown phenomenally within the last three years. *Pluck* and *first-class goods* have done it. Write them.

Write also to James W. Tufts, of Boston, 33 Bowker street, and ask him for his "rock (candy) bottom" price on the "Troubadour" fountain, which looms up in the ad. on page 25. Anyhow you want the new catalogue, which will be sent free by mail.

H. Planten & Sons, manufacturers of filled Capsules, are kept busy filling orders for many of their newest lines of goods. Of course, the reputation of the house is world-wide, and their business keeps pace with the ever-increasing demands of the trade. Prices of the principal lines of their goods will be found in our price-list this month.

Then, too, there are the celebrated Pills, made for many years by Auguste Blaud, of Beaucaise, France, of which you may need a new supply. The card is on page 23.

It will be well to note the prices given by Dr. Henry A. Martin & Son, of Boston, on their Vaccine Virus Ivory Points. The virus made by this company has the highest possible reputation, and this winter is apt to create a fresh demand for the goods.

An interesting bit of talk is indulged in by Mr. C. H. Bangs this month on page 11 relative to fitting up drug stores. If anybody knows what he is talking about it is Mr. B. when he strikes this subject. Read it over. It will be worth your while.

If you have looked and looked at soda fountains and compared prices, etc., at other establishments, and not been exactly suited, then by all means send to Chas. Lippincott & Co., Philadelphia, for their catalogue and particulars on the kind of fountain you want. You will not need to look any further. Come to think of it, you may save time and annoyance by writing them *first*. See page 28.

It often happens that you want a line of *Seamless Tin Boxes* and don't know just where to get them. In that case, if you have no present need for these goods, we would suggest that you turn to page 12 of this journal and cut out the small ad. of Wm. A. Gill & Co. and paste it on your desk, right before your eyes. They make the best.

Some Rubber Specialties are shown this month in the new whole-page advertisement of the Tyer Rubber Co. which will be of live interest to druggists. This company has been extending its lines of manufacture, and consequently its trade territory, within the past three or four years, until now no rubber house is better known by a large proportion of the American drug trade. Look at the page carefully and see if you don't need some of these articles—page 50.

No Expense to You. Never be without advertising matter for Humphreys' Preparations. A postal card sent to the address of the company (cor. William and John Sts., New York City) will bring you a handsome sign or supply of Dr. Humphreys' Manuals, with your name and address printed on each ; all charges prepaid ; *no expense to you.*

Do you sell seeds? If so, do you consider the quality when buying? Poor seeds are the cause of more poor crops than all the atmospheric and climatic changes that occur. Yet you continue right on buying an inferior brand because it is cheap. Is this economy? It can easily be remedied by writing to Messrs. W. H. Morehouse & Co., Toledo, Ohio, wholesale dealers in *Grain, Clover* and *Timothy* Seed. Their Anchor Brand of choice grade clover, which has been recleaned and bulked, is the finest in the market. Also their orchard and lawn grass Hungarian, Red Top, and White Clover, are equally as good. Any one wishing to purchase or sell seeds in bulk should correspond at once with above-named firm.

Just as a reminder we would mention the fact that the following named articles, put up by Wm. R. Warner & Co., of Philadelphia, are essential commodities to every well-equipped drug store: "Bromo Soda," "Elixir Salicylic Acid Comp.," "Pil Sumbul Comp.," "Bromo Potash," and the new granular effervescent, "Antalgic Saline."

The great success of the Upjohn Friable Pills and other pharmaceuticals has been so great that the manufacturers have been compelled, by the demands of the Eastern market, to open a New York office at 92 William street. This New York branch will be under the management of Mr. F. L. Upjohn.

St. Nick Wants Lymph.

Receding phantom of our younger days,
Gray vision of a moonlit vigil, speak!
Why are thy steps missed from their wonted ways?
Why do thy ruddy features pine and peak?
Why do our blasé children laugh to scorn
Thy sleigh, heaped high with bonbon, drum, and horn?
Speak, withered shade of Santa Claus, thy mien
Consumptive shows thou ought'st to have Kochine!

"I'm *ausgespielt!* Alas, no more for me
The reindeer patter o'er the snowy lea—
Did they come now, no doubt for venison
They'd be killed off by some boy with a gun!
No more the trustful heart of childhood beats
In sweet anticipation of my sweets!

"No more the rosy ear is trained to catch
My steeds' light hoofbeats on the echoing thatch!
I am a phantom of the elder day
When childish children learned to romp and play;
With all th' illusions of the past, I go
Back to the vague and silent land of snow;
I flee from Kodaks! telephones destroy
My favorite type of trusting girl and boy;
The L roads scare my deer; to tell the truth,
I'm several points behind the average youth!
Alas, alas! that such a state should be—
There's lymph for chinch bugs, is there none for me?"—*N. Y. World.*

THERE was on exhibition at the Cotton Exchange in Memphis a few weeks since a bale of cotton which had been picked by machinery, and the cotton brokers are talking of the beginning of a new era in the cotton business. The bale weighs 475 pounds, and was picked by the machine in two hours, notwithstanding the rain, on the plantation of C. C. Glover, near that city. The work done is equivalent to that of fifteen men for the same time. The cotton is much cleaner than that picked by hand, and will bring from three-eighths to one-half cent more per pound. The description of the working of "The Todd Harvester" has already been sent in the despatches of the Associated Press.